the journal of steroid biochemistry and molecular biology

Editors-in-chief
J. R. PASQUALINI and R. SCHOLLER

VOLUME CONTENTS,
SUBJECT AND AUTHOR INDEX

Volume 41
1992

Pergamon Press Oxford New York Seoul Tokyo

EDITORS-IN-CHIEF

J. R. PASQUALINI and R. SCHOLLER

Foundation for Hormone Research, 26 Boulevard Brune, 75014 Paris, France

ASSOCIATE EDITORS

H. ADLERCREUTZ, Helsinki, Finland
M. BEATO, Marburg/Lahn, Fed. Rep. Germany
J. CRABBÉ, Brussels, Belgium
E. GURPIDE, New York, U.S.A.
J.-Å. GUSTAFSSON, Huddinge, Sweden
E. V. JENSEN, Hamburg, Fed. Rep. Germany
R. J. B. KING, Guildford, England
M. E. LIPPMAN, Washington, D.C., U.S.A.
L. MARTINI, Milan, Italy
A. MUNCK, Hanover, N.H., U.S.A.
B. W. O'MALLEY, Houston, Tex., U.S.A.
D. O. TOFT, Rochester, Minn., U.S.A.

Honorary Associate Editor: A. E. KELLIE, Beaconsfield, England

CORRESPONDING EDITORS

A. AAKVAAG, Bergen, Norway
F. AURICCHIO, Naples, Italy
E. W. BERGINK, Oss, The Netherlands
R. BOUILLON, Leuven, Belgium
S. BOURGEOIS, San Diego, U.S.A.
A. BRODIE, Baltimore, U.S.A.
K. J. CATT, Bethesda, U.S.A.
L. CEDARD, Paris, France
J. A. CIDLOWSKI, Chapel Hill, U.S.A.
J. H. CLARK, Houston, U.S.A.
P. D. DARBRE, Reading, England
G. DAXENBICHLER, Innsbruck, Austria
L. DEHENNIN, Fresnes, France
E. R. DESOMBRE, Chicago, U.S.A.
B. N. DÍAZ-CHICO, Las Palmas, Spain
R. B. DICKSON, Washington, U.S.A.
M. L. DUFAU, Bethesda, U.S.A.
U.-A. ERIKSSON, Stockholm, Sweden
A. N. FEJES-TOTH, Hanover, U.S.A.
K. FOTHERBY, London, England
J. W. FUNDER, Prahran, Australia
G. GREENE, Chicago, U.S.A.
K. GRIFFITHS, Cardiff, Wales
B. GRONER, Basel, Switzerland
R. B. HOCHBERG, New Haven, U.S.A.
H. HONJO, Kyoto, Japan
K. B. HORWITZ, Denver, U.S.A.
I. HUHTANIEMI, Turku, Finland
D. R. IDLER, Newfoundland, Canada
V. H. T. JAMES, London, England
V. C. JORDAN, Madison, U.S.A.
J. KATO, Yamanashi-ken, Japan
B. S. KATZENELLENBOGEN, Urbana, U.S.A.
A. M. KAYE, Rehovot, Israel
F. LABRIE, Quebec, Canada
C. P. LANTOS, Buenos Aires, Argentina
S. LIAO, Chicago, U.S.A.
V. B. MAHESH, Augusta, U.S.A.
B. S. MCEWEN, New York, U.S.A.
W. L. MCGUIRE, San Antonio, U.S.A.
E. MILGROM, Le Kremlin-Bicêtre, France
W. R. MILLER, Edinburgh, Scotland
J. MÜLLER, Zurich, Switzerland
B. E. P. MURPHY, Montreal, Canada
L. J. MURPHY, Winnipeg, Canada
M. I. NEW, New York, U.S.A.
A. W. NORMAN, Riverside, U.S.A.
M. J. PARKER, London, England
G. PÉREZ-PALACIOS, Mexico City, Mexico
W. B. PRATT, Ann Arbor, U.S.A.
J. P. RAYNAUD, Paris, France
H. ROCHEFORT, Montpellier, France
G. ROUSSEAU, Brussels, Belgium
M. SERIO, Florence, Italy
E. R. SIMPSON, Dallas, U.S.A.
J. SJÖVALL, Stockholm, Sweden
A. SPÄT, Budapest, Hungary
L. STÁRKA, Prague, Czechoslovakia
J. F. STRAUSS III, Philadelphia, U.S.A.
R. L. SUTHERLAND, Darlinghurst, Australia
J. R. TATA, London, England
W. TAYLOR, Tynemouth, England
P. TUOHIMAA, Tampere, Finland
S. ULICK, New York, U.S.A.
G. VERHOEVEN, Leuven, Belgium
A. VERMEULEN, Ghent, Belgium
R. VIHKO, Oulu, Finland
C. A. VILLEE, Boston, U.S.A.
A. E. WAKELING, Macclesfield, England
C. R. WIRA, Hanover, U.S.A.

Publishing Office

Pergamon Press plc, Pergamon House, Bampfylde Street, Exeter EX1 2AH, England
(*Tel.* Exeter (0392) 51558; *Fax* 425370)

Subscription and Advertising Offices

North America: Pergamon Press Inc., 395 Saw Mill River Road, Elmsford, NY 10523, U.S.A.
Rest of the World: Pergamon Press plc, Headington Hill Hall, Oxford OX3 0BW, England
(*Tel.* Oxford (0865) 794141)

Publication Frequency (1992)

24 issues/annum (in 3 volumes). Published monthly with 12 additional issues in March, May and September.

Subscription Rates (1992)

Annual institutional subscription rate (1992), £945.00 (US$1715.00). Two-year institutional rate (1992/93), £1795.50 (US$3258.50). Sterling prices are definitive. U.S. dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Prices include postage and insurance and are subject to change without notice. Subscription rates for Japan are available on request. *Back Issues:* back issues of all previously published volumes, in both hard copy and in microform, are available direct from Pergamon Press offices.

Application to mail at second class postage rate is pending at RAHWAY NJ. Postmaster send address corrections to *The Journal of Steroid Biochemistry and Molecular Biology*, c/o Pergamon Press Inc., 395 Saw Mill River Road, Elmsford, NY 10523, U.S.A.

Copyright © 1992 Pergamon Press plc

LIST OF CONTENTS

JANUARY

Editorial Addresses	iii	
Steroid Nomenclature	vii	
Corinne M. Silva and John A. Cidlowski	1	The effect of oxidation/reduction on the charge heterogeneity of the human glucocorticoid receptor
Nancy A. Klein, Richard N. Andersen, Peter R. Casson, John E. Buster and Robert E. Kramer	11	Mechanisms of insulin inhibition of ACTH-stimulated steroid secretion by cultured bovine adrenocortical cells
C. B. Whorwood, J. A. Franklyn, M. C. Sheppard and P. M. Stewart	21	Tissue localization of 11β-hydroxysteroid dehydrogenase and its relationship to the glucocorticoid receptor
Masamitsu Yoshida, Yoshiko Kuroki, Etsuko Kobayashi and Bun-ichi Tamaoki	29	Kinetic mechanism of reduction of testosterone by hepatic 5β-reductase of chicken and inhibition of the reductase activity by a Secosteroid, an azasteroid and glycyrrhetinic acid
Arie Augarten, Clara Pariente, Ephraim Gazit, Rafael Chayen, Haya Goldfarb and Joseph Sack	37	Ambiguous genitalia due to partial activity of cytochromes *P*450c17 and *P*450c21
Dimitri Stamatiadis, Frederic Dadoun, Marie-Claire Portois, Françoise Wright, Irene Mowszowicz and Pierre Mauvais-Jarvis	43	Isoelectric focusing and 2D electrophoresis of the human androgen receptor
Leszek Markiewicz, Richard B. Hochberg and Erlio Gurpide	53	Intrinsic estrogenicity of some progestagenic drugs
Patricia H. Provencher, Yves Tremblay, Jean Fiet and Alain Bélanger	59	Effect of ACTH on steroidogenic enzymes in guinea pig fasciculata-glomerulosa cells: changes in activity and mRNA levels
Patricia H. Provencher, Yves Tremblay, Simon Caron and Alain Bélanger	69	Effect of chronic ACTH treatment on guinea-pig adrenal steroidogenesis: steroid plasma levels, steroid adrenal levels, activity of steroidogenic enzymes and their steady-state mRNA levels
Donald R. Hodges and Harry J. Karavolas	79	Pituitary progestin-metabolizing enzyme activities in the aged female rat
Robert W. Brueggemeier, Nancy E. Katlic, Charlotte A. Kenreigh and Pui-Kai Li	85	Aromatase inhibition by 7-substituted steroids in human choriocarcinoma cell culture
Anders Rane and Birgitta Ask	91	A conspicuous down-regulating effect of morphine on essential steroid hydroxylation reactions and certain drug *N*-demethylations
Gerard M. Cooke	99	Phospholipases modulate immature pig testicular androgen and 16-androstene biosynthetic pathways *in vitro*
Short Communication **Atsushi Honda, Nobumasa Nakashima, Yo Mori, Takashi Katsumata and Seiichi Ishizuka**	109	Effects of vitamin D-binding proteins on HL-60 cell differentiation induced by 26,26,26,27,27,27-hexafluoro-1α,25-dihydroxyvitamin D_3
Forthcoming Papers	I	
Announcement	II	

FEBRUARY

Constance Chiappetta, John L. Kirkland, David S. Loose-Mitchell, Lata Murthy and George M. Stancel	113	Estrogen regulates expression of the *jun* family of protooncogenes in the uterus
Véronique Albaladejo, Feï Zhou-Li, Brigitte Nicolas, Marie-Odile Joly-Pharaboz, Odile Avallet, Michèle Vigier and Jean André	125	Possible involvement of transforming growth factor-β in the inhibition of rat pituitary tumor growth by estradiol
E. L. Elfahime, M. Plante, F. René, J. M. Félix and B. Koch	135	Biosynthesis of hepatic corticosteroid-binding globulin: ontogeny and effect of thyroid hormone
Jadwiga Gniot-Szulżycka and Barbara Wojczuk	141	Subunits of sterol sulphate sulphohydrolase from human placenta microsomes
Paula Stein and Marta Tesone	145	Effect of a NADPH generating system on the steroidogenic response in rat luteal cells
Ian R. Senciall, S. Rahal and R. Roberts	151	Corticosteroid side chain oxidations—II. Metabolism of 20-dihydro steroids and evidence for steroid acid formation by direct oxidation at C-21
Ray V. Haning Jr, Richard J. Hackett and Jacob A. Canick	161	Steroid sulfatase in the human ovary and placenta: enzyme kinetics and phosphate inhibition
Ana María Pino, Héctor Inostroza and Luis E. Valladares	167	Detection of testosterone secretion from individual rat Leydig cells
Brendan J. Waddell, Eugene D. Albrecht and Gerald J. Pepe	171	Utilization of maternal and fetal androstenedione for placental estrogen production at mid and late baboon pregnancy
Shizuo Nakajin, Shigeo Fujii, Shuji Ohno and Masato Shinoda	179	3α-Hydroxysteroid dehydrogenase activity catalyzed by purified pig adrenal 20α-hydroxysteroid dehydrogenase
Leon Milewich, James D. Madden and Celso E. Gomez-Sanchez	185	5α-Androstane-3,17-dione in peripheral plasma of men and women
M. Colombier, J.-L. J. Gachancard-Bouya, R.-J. Bègue and M. Prost	191	Identification of 2α-hydroxy-4-pregnene-3,20-dione in human pregnancy urine
Short Communication		
Helena Lenasi, Katja Breskvar and Tamara Hudnik-Plevnik	197	Estradiol binding components in intestinal mucosa of female rats
Forthcoming Papers	I	
Announcements	II	

MARCH

RECENT ADVANCES IN STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY

PROCEEDINGS OF THE 10th INTERNATIONAL SYMPOSIUM OF *THE JOURNAL OF STEROID BIOCHEMISTRY AND MOLECULAR BIOLOGY*

Preface	ix	

Steroid Receptor Structure, Gene Expression and Molecular Mechanism

David F. Smith and David O. Toft 201 Composition, assembly and activation of the avian progesterone receptor

Anne Guiochon-Mantel, Hugues Loosfelt, Pierre Lescop, Sophie Christin-Maitre, Martine Perrot-Applanat and Edwin Milgrom 209 Mechanisms of nuclear localization of the progesterone receptor

H. Gronemeyer, B. Benhamou, M. Berry, M. T. Bocquel, D. Gofflo, T. Garcia, T. Lerouge, D. Metzger, M. E. Meyer, L. Tora, A. Vergezac and P. Chambon 217 Mechanisms of antihormone action

William B. Pratt, Lawrence C. Scherrer, Kevin A. Hutchison and Friedrich C. Dalman 223 A model of glucocorticoid receptor unfolding and stabilization by a heat shock protein complex

Anthony W. Norman, Ilka Nemere, Li-Xin Zhou, June E. Bishop, Karen E. Lowe, Anita C. Maiyar, Elaine D. Collins, Teruhisa Taoka, Igor Sergeev and Mary C. Farach-Carson 231 $1,25(OH)_2$-vitamin D_3, a steroid hormone that produces biologic effects via both genomic and nongenomic pathways

Mathias Truss, Georges Chalepakis, Benjamin Piña, Domingo Barettino, Ulf Brüggemeier, Martha Kalff, Emily P. Slater and Miguel Beato 241 Transcriptional control by steroid hormones

Karin Dahlman-Wright, Anthony Wright, Jan Carlstedt-Duke and Jan-Åke Gustafsson 249 DNA-binding by the glucocorticoid receptor: a structural and functional analysis

E. B. Thompson, L. V. Nazareth, R. Thulasi, J. Ashraf, D. Harbour and B. H. Johnson 273 Glucocorticoids in malignant lymphoid cells: gene regulation and the minimum receptor fragment for lysis

Wolfgang Hoeck, Paul Hofer and Bernd Groner 283 Overexpression of the glucocorticoid receptor represses transcription from hormone responsive and non-responsive promoters

C. E. Emmas, S. E. Fawell, S. A. Hoare and M. G. Parker 291 Effect of ligand binding and DNA binding on the structure of the mouse oestrogen receptor

Michael E. Baker 301 Evolution of regulation of steroid-mediated intercellular communication in vertebrates: insights from flavonoids, signals that mediate plant–*rhizobia* symbiosis

Steroid Hormones, Anti-steroids, Growth Factors, Oncogenes and Cancer

Liam J. Murphy, Yuewen Gong and Leigh C. Murphy 309 Regulation of transforming growth factor gene expression in human endometrial adenocarcinoma cells

Robert L. Sutherland, Christine S. L. Lee, Romy S. Feldman and Elizabeth A. Musgrove 315 Regulation of breast cancer cell cycle progression by growth factors, steroids and steroid antagonists

J. R. Pasqualini, B. Schatz, C. Varin and B.-L. Nguyen 323 Recent data on estrogen sulfatases and sulfotransferases activities in human breast cancer

Herman Adlercreutz, Yaghoob Mousavi, Jim Clark, Krister Höckerstedt, Esa Hämäläinen, Kristiina Wähälä, Taru Mäkelä and Tapio Hase 331 Dietary phytoestrogens and cancer: *in vitro* and *in vivo* studies

H. Michna, Y. Nishino, G. Neef, W. L. McGuire and M. R. Schneider — 339 Progesterone antagonists: tumor-inhibiting potential and mechanism of action

Pirkko Henttu and Pirkko Vihko — 349 Steroids inversely affect the biosynthesis and secretion of human prostatic acid phosphatase and prostate-specific antigen in the LNCaP cell line

A. O. Brinkmann, G. Jenster, G. G. J. M. Kuiper, C. Ris, J. H. van Laar, J. A. G. M. van der Korput, H. J. Degenhart, M. A. Trifiro, L. Pinsky, G. Romalo, H. U. Schweikert, J. Veldscholte, E. Mulder and J. Trapman — 361 The human androgen receptor: structure/function relationship in normal and pathological situations

L. Lemesle-Varloot, T. Ojasoo, J. P. Mornon and J. P. Raynaud — 369 A model for the determination of the 3D-spatial distribution of the functions of the hormone-binding domain of receptors that bind 3-keto-4-ene steroids

Robert B. Dickson — 389 Regulation of tumor–host interactions in breast cancer

Enzymatic Control of Steroid Hormone Production

Helen L. Henry, Chhanda Dutta, Noreen Cunningham, Raymond Blanchard, Robert Penny, Chilung Tang, Gail Marchetto and Shu-Yin Chou — 401 The cellular and molecular regulation of $1,25(OH)_2D_3$ production

Evan Simpson, Markus Lauber, Michelle Demeter, Gary Means, Mala Mahendroo, Michael Kilgore, Carole Mendelson and Michael Waterman — 409 Regulation of expression of the genes encoding steroidogenic enzymes in the ovary

Mitsuhiro Okamoto and Yasuki Nonaka — 415 Molecular biology of rat steroid 11β-hydroxylase [*P*450(11β)] and aldosterone synthase [*P*450(11β, aldo)]

F. Labrie, J. Simard, V. Luu-The, G. Pelletier, A. Bélanger, Y. Lachance, H. F. Zhao, C. Labrie, N. Breton, Y. de Launoit, M. Dumont, E. Dupont, E. Rhéaume, C. Martel, J. Couët and C. Trudel — 421 Structure and tissue-specific expression of 3β-hydroxysteroid dehydrogenase/5-ene-4-ene isomerase genes in human and rat classical and peripheral steroidogenic tissues

A. S. Bhatnagar, Ph. Müller, L. Schenkel, P. F. Trunet, I. Beh and K. Schieweck — 437 Inhibition of estrogen biosynthesis and its consequences on gonadotrophin secretion in the male

Steroid Hormones in Reproduction

Lefke P. Karaviti, Arlene B. Mercado, Myra B. Mercado, Phyllis W. Speiser, Mimi Buegeleisen, Christopher Crawford, Lida Antonian, Perrin C. White and Maria I. New — 445 Prenatal diagnosis/treatment in families at risk for infants with steroid 21-hydroxylase deficiency (congenital adrenal hyperplasia)

Stanko S. Stojilković, Antonio Torsello, Toshihiko Iida, Eduardo Rojas and Kevin J. Catt — 453 Calcium signaling and secretory responses in agonist-stimulated pituitary gonadotrophs

J. Verhaeghe and R. Bouillon — 469 Calciotropic hormones during reproduction

Gregorio Pérez-Palacios, Marco A. Cerbón, Ana M. Pasapera, J. Ivone Castro, Juana Enríquez, Felipe Vilchis, Gustavo A. García, Gabriela Morali and Ana E. Lemus — 479 Mechanisms of hormonal and antihormonal action of contraceptive progestins at the molecular level

Guido Verhoeven, Kristien Swinnen, Jean Cailleau, Ludo Deboel, Luk Rombauts and Walter Heyns	487	The role of cell–cell interactions in androgen action
Virendra B. Mahesh and Darrell W. Brann	495	Interaction between ovarian and adrenal steroids in the regulation of gonadotropin secretion
Gillian L. Steele and Peter C. K. Leung	515	Intragonadal signalling mechanisms in the control of steroid hormone production

Poster Presentations

Luigi Cicatiello, Concetta Ambrosino, Bruna Coletta, Marilina Scalona, Vincenzo Sica, Francesco Bresciani and Alessandro Weisz	523	Transcriptional activation of *jun* and actin genes by estrogen during mitogenic stimulation of rat uterine cells
Colin K. W. Watts, Malcolm L. Handel, Roger J. B. King and Robert L. Sutherland	529	Oestrogen receptor gene structure and function in breast cancer
T. Thorsen, H. Lahooti, M. Rasmussen and A. Aakvaag	537	Oestradiol treatment increases the sensitivity of MCF-7 cells for the growth stimulatory effect of IGF-I
E. A. Lien, D. C. Johannessen, A. Aakvaag and P. E. Lønning	541	Influence of tamoxifen, aminoglutethimide and goserelin on human plasma IGF-I levels in breast cancer patients
G. Leclercq, N. Legros and M. J. Piccart	545	Accumulation of a non-binding form of estrogen receptor in MCF-7 cells under hydroxytamoxifen treatment
G. Chetrite and J. R. Pasqualini	553	Effect of embryonic mouse cells BALB/c-3T3 on the proliferation of the human mammary cancer cell line T-47D
E. von Angerer and S. Erber	557	3-Alkyl-2-phenylbenzo[*b*]thiophenes: nonsteroidal estrogen antagonists with mammary tumor inhibiting activity
A. Purohit, O. Chapman, L. Duncan and M. J. Reed	563	Modulation of oestrone sulphatase activity in breast cancer cell lines by growth factors
Itsuo Yoshizawa, Kaori Takanashi, Kazuhiro Watanabe, Takashi Sato, Hideo Honjo, Kazunori Tanaka, Noriaki Sakuragi and Seiichiro Fujimoto	567	The physiological role of estradiol 17-sulfate during pregnancy
A. Fanidi, C. Ahnadi, J. M. Fayard, J. F. Pageaux and C. Laugier	571	Opposite regulation of cAMP concentration in the quail oviduct and the mouse uterus by tamoxifen. Correlation with estrogen-antagonist and estrogen-agonist activity
Richard Roy, Sophie Dauvois, Fernand Labrie and Alain Bélanger	579	Estrogen-stimulated glucuronidation of dihydrotestosterone in MCF-7 human breast cancer cells
Shuji Hirata, Takaaki Osada, Mitsuo Hirai, Kazuki Hagihara and Junzo Kato	583	Expression of estrogen receptor in the rat brain: detection of its mRNA using reverse transcription-polymerase chain reaction
D. Navarro, J. J. Cabrera, L. León, R. Chirino, L. Fernández, A. López, J. F. Rivero, P. Fernández, O. Falcón, P. Jiménez, J. Pestano, J. C. Díaz-Chico and B. N. Díaz-Chico	589	Endometrial stromal sarcoma expression of estrogen receptors, progesterone receptors and estrogen-induced srp27 (24K) suggests hormone responsiveness
C. Martel, E. Rhéaume, M. Takahashi, C. Trudel, J. Couët, V. Luu-The, J. Simard and F. Labrie	597	Distribution of 17β-hydroxysteroid dehydrogenase gene expression and activity in rat and human tissues
M. Dumont, V. Luu-The, Y. de Launoit and F. Labrie	605	Expression of human 17β-hydroxysteroid dehydrogenase in mammalian cells

A. Claussner, L. Nédélec, F. Nique, D. Philibert, G. Teutsch and P. Van de Velde	609	11β-Amidoalkyl estradiols, a new series of pure antiestrogens
Yaghoob Mousavi and Herman Adlercreutz	615	Enterolactone and estradiol inhibit each other's proliferative effect on MCF-7 breast cancer cells in culture
Ingrid Jung-Testas, Michel Renoir, Helene Bugnard, Geoffrey L. Greene and Etienne-Emile Baulieu	621	Demonstration of steroid hormone receptors and steroid action in primary cultures of rat glial cells
H. Honjo, T. Tamura, Y. Matsumoto, M. Kawata, Y. Ogino, K. Tanaka, T. Yamamoto, S. Ueda and H. Okada	633	Estrogen as a growth factor to central nervous cells. Estrogen treatment promotes development of acetylcholinesterase-positive basal forebrain neurons transplanted in the anterior eye chamber
Kazuki Hagihara, Shuji Hirata, Takaaki Osada, Mitsuo Hirai and Junzo Kato	637	Expression of progesterone receptor in the neonatal rat brain cortex: detection of its mRNA using reverse transcription-polymerase chain reaction
S. Salomaa, T. Joensuu, T. Sannisto, T. Ylikomi, M. Kulomaa and P. Tuohimaa	641	*In situ* hybridization of ovalbumin mRNA in the chick oviduct reveals target cell specificity for estrogen and progesterone
Lawrence B. Hendry and Virendra B. Mahesh	647	Stereochemical complementarity of progesterone, RU486 and cavities between base pairs in partially unwound double stranded DNA assessed by computer modeling and energy calculations
S. Chasserot-Golaz and G. Beck	653	How the potency of the steroid RU486 is related to *P*450 activities induced by dexamethasone and phenobarbital in rat hepatoma cells
B. Zuck, C. Goepfert, A. Nedlin-Chittka, K. Sohrt, K.-D. Voigt and C. Knabbe	659	Regulation of fibroblast growth factor-like protein(s) in the androgen-responsive human prostate carcinoma cell line LNCaP
J. Veldscholte, C. A. Berrevoets, C. Ris-Stalpers, G. G. J. M. Kuiper, G. Jenster, J. Trapman, A. O. Brinkmann and E. Mulder	665	The androgen receptor in LNCaP cells contains a mutation in the ligand binding domain which affects steroid binding characteristics and response to antiandrogens
G. Jenster, J. A. G. M. van der Korput, J. Trapman and A. O. Brinkmann	671	Functional domains of the human androgen receptor
N. Boujrad, J. M. Guillaumin, P. Bardos, M. T. Hochereau de Reviers, M. A. Drosdowsky and S. Carreau	677	Germ cell–Sertoli cell interactions and production of testosterone by purified Leydig cells from mature rat
C. Lubrano, F. Sciarra, G. Spera, E. Petrangeli, V. Toscano, N. Rombola, F. Palleschi, E. Palma and F. Di Silverio	683	Immunoreactive EGF in human benign prostatic hyperplasia: relationships with androgen and estrogen receptors
Y. Amet, B. Simon, E. Quemener, P. Mangin, H. H. Floch and J. H. Abalain	689	Partial purification of 3α- and 3β-hydroxysteroid dehydrogenases from human hyperplastic prostate. Comparison between the two enzymes
Y. H. Zhuang, M. Bläuer, A. Pekki and P. Tuohimaa	693	Subcellular location of androgen receptor in rat prostate, seminal vesicle and human osteosarcoma MG-63 cells
George G. J. M. Kuiper, Petra E. de Ruiter and Albert O. Brinkmann	697	Androgen receptor heterogeneity in LNCaP cells is caused by a hormone independent phosphorylation step
T. K. Joensuu, M. K. Bläuer, T. Sannisto and P. J. Tuohimaa	701	The effect of dihydrotestosterone on the estrogen-induced cytodifferentiation of the chick oviduct
M. Spatz, A. Waisman and A. M. Kaye	711	Responsiveness of the 5′-flanking region of the brain type isozyme of creatine kinase to estrogens and antiestrogen
Kevin A. Hutchison, Gordana Matić, Michael J. Czar and William B. Pratt	715	DNA-binding and non-DNA-binding forms of the transformed glucocorticoid receptor

Lawrence C. Scherrer and William B. Pratt	719	Association of the transformed glucocorticoid receptor with a cytoskeletal protein complex
Mária Alexandrová	723	Duration of antagonizing effect of RU486 on the agonist induction of tyrosine aminotransferase via glucocorticoid receptor
I. Segard-Maurel, N. Jibard, G. Schweizer-Groyer, F. Cadepond and E.-E. Baulieu	727	Mutations in the "zinc fingers" or in the N-terminal region of the DNA binding domain of the human glucocorticosteroid receptor facilitate its salt-induced transformation, but do not modify hormone binding
Tina S. Berger, Zahra Parandoosh, Bruce W. Perry and Robert B. Stein	733	Interaction of glucocorticoid analogues with the human glucocorticoid receptor
Marc G. Denis, Corinne Chadéneau, Philippe Blanchardie and Patrick Lustenberger	739	Biological effects of glucocorticoid hormones on two rat colon adenocarcinoma cell lines
G. Schweizer-Groyer, A. Groyer, F. Cadepond, T. Grange, E.-E. Baulieu and R. Pictet	747	Two liver-enriched *trans*-acting factors support the tissue-specific basal transcription from the rat tyrosine aminotransferase promoter
A. Pekki, J. Koistinaho, T. Ylikomi, P. Vilja, H. Westphal and P. Tuohimaa	753	Subcellular location of unoccupied and occupied glucocorticoid receptor by a new immunohistochemical technique
R. Chirino, L. Fernández, A. López, D. Navarro, J. F. Rivero, J. C. Díaz-Chico and B. N. Díaz-Chico	757	The estradiol induction of the microsomal low-affinity glucocorticoid binding sites (LAGS) in the male rat liver is independent of the endocrine status
M. D. W. G. Krekels, W. Wouters, R. Van Ginckel, B. Janssens, M. Callens and R. De Coster	761	Aromatase inhibition by R 83 842, the dextro isomer of R 76 713, in JEG-3 choriocarcinoma grown in ovariectomized nude mice
E. Di Salle, G. Briatico, D. Giudici, G. Ornati, M. Nesi and A. Panzeri	765	17β-Acylurea derivatives of 4-azasteroids as inhibitors of testosterone 5α-reductase
S. Jacobs, F. MacNeill, P. Lonning, M. Dowsett, A. Jones and T. Powles	769	Aromatase activity, serum oestradiol and their correlation with demographic indices
C. Delaisi, B. Doucet, C. Hartmann, B. Tric, J. F. Gourvest and D. Lesuisse	773	RU54115, a tight-binding aromatase inhibitor potentially useful for the treatment of breast cancer
Yasuki Nonaka, Mitsuhiro Okamoto, Ken-ichirou Morohashi, Shirou Kirita, Toshihide Hashimoto and Tsuneo Omura	779	Functional expression of cDNAs for bovine 11β-hydroxylase-aldosterone synthases, *P*450(11β)-2 and -3, and their chimeras
D. Szabó, F. Czakó, I. E. Tóth, K. Sz. Szalay, K. Krasznai and E. Stark	781	Effect of chronic ACTH treatment on the physical state of lipid droplets in rat adrenocortical cells
A. Häusler, C. Persoz, R. Buser, C. Mondadori and A. Bhatnagar	785	Adrenalectomy, corticosteroid replacement and their importance for drug-induced memory-enhancement in mice
E. Orsó, I. E. Tóth, D. Szabó and G. Szilágyi	791	Changes in adrenocortical lipid fluidity of hyperfunctioning human adrenals
A. Larcher, C. Delarue, S. Idres and H. Vaudry	795	Interactions between vasotocin and other corticotropic factors on the frog adrenal gland
André Tremblay and Jean-Guy Lehoux	799	Influence of captopril on adrenal cytochrome *P*-450s and adrenodoxin expression in high potassium or low sodium intake
Jean-Guy Lehoux and Lyne Ducharme	809	The differential regulation of aldosterone output in hamster adrenal by angiotensin$_{II}$ and adrenocorticotropin
Marie-Edith Rafestin-Oblin, Marc Lombes, Brigitte Couette and Etienne-Emile Baulieu	815	Differences between aldosterone and its antagonists in binding kinetics and ligand-induced hsp90 release from mineralocorticosteroid receptor
N. Emeric-Blanchouin, M. Zenatti, V. Vonarx, G. Schaison and B. Aupetit-Faisant	823	Cortisol and testosterone: inhibitory agents of the mineralocorticoid pathway. Is there a physiopathological meaning in adrenal tumors?

G. Rumsby, C. Skinner and J. W. Honour	827	Genetic analysis of the steroid 21-hydroxylase gene following *in vitro* amplification of genomic DNA
N. Cherradi, C. Guidicelli, G. Defaye and E. M. Chambaz	831	Purification and characterization of 3β-hydroxysteroid-dehydrogenase/isomerase from bovine adrenal cortex
Seema Rani, M. C. Vaidya and Kumar Rani	837	Role of cell growth factor (interleukin-2) and its receptors in carcinoma cervix patients
Y. Nishino, H. Michna, S. H. Hasan and M. R. Schneider	841	Involvement of the adrenal glands in the prolactin rise induced in the female rat by an antiprogestin, ONAPRISTONE
Darrell W. Brann and Virendra B. Mahesh	847	Excitatory amino acid regulation of gonadotropin secretion: modulation by steroid hormones
Gisèle Desvages and Claude Pieau	851	Aromatase activity in gonads of turtle embryos as a function of the incubation temperature of eggs
Alexander V. Sirotkin	855	Involvement of steroid hormones in bovine oocytes maturation *in vitro*
F. Qaw, N. J. Schroeder, M. J. Calverley, D. J. H. Trafford, H. L. J. Makin and G. Jones	859	The metabolism of dihydrotachysterols: renal side chain and non-renal nuclear hydroxylations *in vivo* and *in vitro*
A. D. Tait	871	Biosynthesis of androgens by the sesterterpene pathway via 23,24-dinor-4-cholen-3-one
P. Holownia, E. J. Owen, G. S. Conway, J. Round and J. W. Honour	875	Studies to confirm the source of 11β-hydroxyandrostenedione
Ana E. Lemus, Felipe Vilchis, Rebeca Damsky, Bertha A. Chávez, Gustavo A. García, Ivonne Grillasca and Gregorio Pérez-Palacios	881	Mechanism of action of levonorgestrel: *in vitro* metabolism and specific interactions with steroid receptors in target organs
M. A. Blankenstein, I. Maitimu-Smeele, G. H. Donker, J. Daroszewski, A. Milewicz and J. H. H. Thijssen	891	On the significance of *in situ* production of oestrogens in human breast cancer tissue